



Case Docket No. CHR 02-38

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Michael F. Tschantz

Provisional Filed: October 8, 2002

Statutory Filed: July 15, 2003 (referencing benefit of Provisional filing date)

Provisional Serial No. 60/416,974

Serial No.: 10/621,946

For: "Carbon-Containing Shaped Cylinders For Engine Air Induction System Emission"

Examiner:

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

DECLARATION IN SUPPORT OF  
PETITION TO MAKE SPECIAL UNDER 37 C.F.R. § 1.102(c)

Dear Sir:

I, Terry B. McDaniel, Esq., declare as follows:

(1) I am an attorney-of-record for applicants in the above-identified application and, having drafted the specification and claims thereof, am fully aware of the nature of the invention thereof and of its significance and, on implementation, of its ability to materially enhance the quality of the environment and prevent health hazards (which is a basis for granting a petition to make special under MPEP 708.02, V).

(2) The instant application describes a method for sharply reducing diurnal breathing loss emissions from automotive evaporative emissions control systems by providing multiple layers, or stages, of adsorbents. Evaporation of gasoline from motor vehicle fuel systems is a major potential source of hydrocarbon air pollution. The automotive industry is challenged to design engine components and systems to contain, as much as possible, the almost one billion gallons of gasoline evaporated from fuel systems each year in the United States alone. Such emissions can be controlled by canister systems that employ activated carbon to adsorb and hold the vapor that evaporates. Recently, regulations have been promulgated that require a change in the approach with respect to the way in which vapors must be controlled. Allowable emission levels from canisters would be reduced to such low levels that the primary source of emitted vapor, the fuel tank, is no longer the regulatory focus, as current conventional evaporative

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emission control appears to have achieved a high efficiency of removal. Rather, the concern now is actually the hydrocarbon left on the carbon adsorbent itself as a residual "heel" after the regeneration (purge) step. Such emissions typically occur when a vehicle has been parked and subjected to diurnal temperature changes over a period of several days, commonly called "diurnal breathing losses." The invention improved combination of high working capacity carbons on the fuel source-side and preferred lower working capacity adsorbent on the vent-side provides substantially lower diurnal breathing emissions (without a significant loss in working capacity or increase in flow restriction) compared with known adsorbents used in canister configurations for automotive emissions control systems.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and, further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 USC § 1001 and that such false statements may jeopardize the validity of this document and the application to which it relates.

Signed at Charleston, South Carolina, this 7<sup>th</sup> day of October, 2003.

A handwritten signature in black ink, appearing to read "Terry B. McDaniel", is written over the printed name.

Terry B. McDaniel  
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